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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 11 FEB 2005

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Applicant's or agent's file reference SI-17756-PCT		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. <b>PCT/KR2003/001009</b>	International filing date (day/month/year) <b>22 MAY 2003 (22.05.2003)</b>	Priority date (day/month/year) 28 OCTOBER 2002 (28.10.2002)
International Patent Classification (IPC) or national classification and IPC  <b>IPC7 B23K 20/00</b>		
Applicant  <b>SAMSUNG ELECTRONICS CO., LTD. et al</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  <b>31 MARCH 2004 (31.03.2004)</b>	Date of completion of this report  31 JANUARY 2005 (31.01.2005)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer  CHUNG, Sang Yong  Telephone No. 82-42-481-5524 

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/001009

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

☒ the international application as originally filed☐ the description:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the claims:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the drawings:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☐ The amendments have resulted in the cancellation of:☐ the description, pages \_\_\_\_\_☐ the claims, Nos. \_\_\_\_\_☐ the drawings, sheets \_\_\_\_\_5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-7	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1-7	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims	NONE	NO

**2. Citations and explanations (Rule 70.7)**

Reference is made to the following documents:

D1: JP 2001-034187 A

D2: US 5,178,319 A

D3: JP 1998-311983 A

1. Claim 1 of the present application claims a compression bonding method comprising the steps of: patterning a metal bonding film in predetermined shapes on a substrate; disposing a bonded element on the metal bonding film; and applying heat to the substrate and pressure to the bonded element, thereby bonding the bonded element to the substrate having the metal bonding film.

2. D1 is the closest prior art to claim 1. D1 relates to a method for bonding a tape carrier package (TCP, 14) to a substrate (15), comprising the steps of disposing an anisotropic conductive film (ACF, 17) between the TCP and the substrate, and applying heat to the substrate and pressure to the substrate and the TCP. D1 discloses a pressure head (2), a backup part (6), a heating unit (1), and a pressure cylinder (4) as elements for performing said steps.

Claim 1 is the same as D1 in while applying heat to the substrate and at the same time applying pressure to the substrate and the bonded element. However, claim 1 differs from D1 in that D1 does not include the step of patterning a metal bonding film in predetermined shapes on a substrate. Formation of a metal bonding film in a pattern having a predetermined interval and thickness, not into a uniform flat shape, has an effect for facilitating the bonding of a substrate and a bonded element even at a low temperature and a low pressure.

None of D1-D3 disclose the patterning of a metal bonding film on a substrate, and said patterning would not be obvious to a person skilled in the art. Therefore, claim 1 meets the requirement of PCT Article 33(3).

(Continued on Supplemental Sheet.)

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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## Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Box V.

2. Claim 2 adds the patterning of a metal bonding film on a bonded element to the technical features of claim 1. Since claim 2 is considered to be dependent on claim 1, claim 2 also meets the requirement of PCT Article 33(3).

3. Since claims 3-7 are dependent on claim 1 or claim 2, claims 3-7 also meet the requirement of PCT Article 33(3).